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ABSTRACT

This individualized inservice packet on literal comprehension in the content areas is intended to give teachers information and instructional guidelines to assist students to read for specific facts. It is one of a nine-part series of booklets--Teaching Teen Reading--in self-instructional format intended as a practical resource for teachers desiring condensed, readily usable answers to questions regarding reading instruction. The booklet focuses on 12 suggested applications with learners, dealing with: (1) locating information explicitly stated in the selection; (2) determining key words; (3) recalling information from memory; (4) identifying a question on the literal level; (5) organizing information into given categories; (6) purpose setting by the student prior to reading; (7) matching and labeling; (8) utilizing multiple choice; (9) locating cause and effect; (10) recalling cause and effect relationships; (11) following directions; and (12) developing literal skills through the use of puzzles. A self-corrective post test, a glossary, and an 18-item bibliography are attached. (SR)

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Literal Comprehension in the Content Areas

Individualized
Inservice
Packet
Number III

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TEACHING TEEN READING SERIES

Ohio Department of Education
Columbus

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FOREWORD

One of the complex problems facing educational institutions today is the challenge of developing personalized education programs to meet the needs of youth and adults. Providing students with the skills of reading is fundamental to this essential contribution of our schools. The ability to read and the use of reading skills are necessary components in the foundation of lifetime learning.

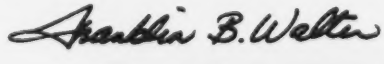
All teachers must be competent with the reading process so that their students might receive individualized and personalized learning. Students who are unable to use reading skills appropriate to the content area tasks they encounter lose valuable opportunities to retrieve and store knowledge and information.

The Division of Inservice Education continues to develop inservice education materials which may be used individually by teachers or by teacher leaders working together with a small group of colleagues. The materials are designed to give condensed professional information which will meet an instructional need or interest.

The **TEACHING TEEN READING SERIES** was designed as a resource for the teachers of upper elementary, middle and secondary schools. The content complements the use of any print materials supplied within the schools. Each of the nine inservice booklets in the series include a self-instructional format which contains concept, methodology, and content application. Two booklets relate to the process of diagnosis, four booklets provide prescriptive techniques, and three booklets illustrate classroom and independent application of reading skills.

Initially one set of this series was distributed to every building principal in Ohio. During the last six years the demand for copies has steadily increased as copies have been requested for individual use, for staff inservice, as the course text for graduate and undergraduate reading classes, and for parents who wish to support their son or daughter with mastery of a subject area.

Ohio remains in the forefront of providing inservice leadership through the provision of relevant materials. The Ohio Department of Education continues to strive to develop inservice materials which will be beneficial to teachers and administrators as they endeavor to work as a leadership team to achieve excellence in education.



Franklin B. Walter
Superintendent of Public Instruction

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To enable the teacher to instruct students to read for specific facts and details

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INTRODUCTION

WHO? WHAT? WHEN? WHERE?

The purpose of this **Individualized Inservice Packet** is to give teachers information and instructional guidelines to assist students to read for specific facts. Literal comprehension is the first and less complex level of gaining meaning from the printed page. This reading skill is used to locate explicitly stated information. Interpretive comprehension follows in the developmental sequence (Packet IV).

This packet deals with a basic reading skill which applies to varied types of reading and to any subject area. The content does not refer to any particular print materials but may be used with the books, reference sets, periodicals and other resources already in use at the school.

The INDIVIDUALIZED INSERVICE PACKET is a practical resource for teachers who have a question regarding reading instruction which requires a condensed, readily usable answer. It is a means for securing a segment of information for immediate application in the classroom as compared to researching many sources.

A self-instruction process is incorporated beginning with steps of securing instructional information, including suggested uses in content teaching situations, and followed by a self-corrective post evaluation. The packet content is developed to provide the understandings summarized in the post evaluation. This form may be reproduced for the teachers' personal use. The responses may lead to continued study of the packet or to reading of the literature included in the bibliography.

LITERAL COMPREHENSION IN THE CONTENT AREAS

OBJECTIVE

To enable the teacher to instruct students to read for specific facts and details

INSTRUCTIONAL CONCEPT

Literal comprehension is the primary level of getting meaning from the printed page. It entails locating information for specific answers to factual questions. No interpretation of the facts is involved through the recognition of inherent relationships. Generally, word or sentence location is a simple endeavor and results in immediate rather than lasting recall.

Because some readers possess this level of functioning and the literal level is the foundation for the expansion of comprehension, it is one of the many uses of reading.

The literal level of comprehension focuses upon finding facts and detail in the content. It is a means to understanding.

SUGGESTED APPLICATION WITH LEARNERS

I LOCATING INFORMATION EXPLICITLY STATED IN THE SELECTION

The purpose is to teach the student to read for factual information. The learner needs knowledge obtained from facts through reading. Otherwise, his response will be based on chance.

Content Example—Mathematics

INTRODUCING COMPUTERS

The computer works very much the way you do when you solve a problem. First you plan the steps you will follow in working it out. The steps for the computer are called the program. Then you bring together the facts and figures, or data, you will be using. That is the computer's input. Next you organize your data so that you can go through each step of the program. This is handled by the control unit of the computer. You do the actual calculations. The main part of the computer, the central processor, does this step. Sometimes you put aside information that you will need later. This section of the computer is known as the memory. At the end you come up with a solution. The computer, too, produces an answer, called the output.

Excerpt: *Those Amazing Computers! Uses of Modern Thinking Machines*, Melvin Berger (The John Day Company, New York).

Suggested Teaching Tactic

- The learner's attention is directed to the facts and details of what he is reading. Through experience he comes to realize that literal information must be substantiated by explicit words or sentences. A **key tactic** for encouraging learner attention is **purpose setting.** He is directed to the specific cues necessary for discerning the facts and details.

  WHO? WHAT? WHEN? WHERE?

- Using the purpose setting formula, direct the student to make tally marks on a piece of paper under the appropriate question. These would repre-

- Draw from the student what he knows about computers. List his ideas on the chalkboard.

  Read silently to determine the answer.

  What does a computer do?

- The computer works very much the way you do when you solve problems.

sent the factual details in the selection.

- Provide the key words used in the selection. Direct the student to read to locate additional information.

- program
  input
  output
  central processor
  memory
  control unit

- Give the student factual questions to which he is to find specific answers. Initially, teacher guidance could be given through the provision of page, column, and paragraph where the answer can be located. The teacher determines those who continue to need this type of assistance.

- 1. Locate the word which means the steps of the computer's work.
  2. What part of the computer does the actual calculation?
  3. What is the computer's answer called?

Suggested Criterion Referenced Measurement

Given a short informative selection, the student locates the answers to factual questions. In response he uses the specific words of the author.

The criterion for mastery is 80 percent. The material should be appropriate to the reading ability of the student. If he is unable to read, the measurement may be changed to a listening task.

SUGGESTED APPLICATION WITH LEARNERS

2 DETERMINING KEY WORDS WHICH TRIGGER COMPREHENSION ON THE LITERAL LEVEL

Content Example—Current Events

THINK METRIC OR YOU'LL BE KILOMETERS BEHIND SHORTLY

Slowly, slowly, 2.54 centimeters by 2.54 centimeters, the United States is inching toward formal adoption of the metric system of weights and measures. Conversion to metrics would replace the random charm of our present "customary" system, which is based on such folklore as a Saxon King's girth, with decimal rationality.

The notion that metrics was an idea whose time had come has occurred, reoccurred and faded for more than a century. Now the United States alone among the industrialized nations clings to what is called

a customary system, and is one of only a handful in the world to use a customary system at all.

The system we use now is based on no single concept, but on a rich mixture of inherited standards whose origins are sometimes uncertain and often fanciful.

Measuring and weighing things has been a human preoccupation at least since the Ancient Egyptians discovered that property lines were wiped out by the annual Nile flooding and came up with a system of measurements to make identification possible. Early units of measurement and weight were based on the familiar—on seashells, on kernels of grain, on the capacity of baskets or goatskins, and on parts of the human body.

Excerpt: *The New York Times* (February 3, 1974)

Suggested Teaching Tactic

- The teacher direction is for the student to circle the words which trigger the literal comprehension of the major points of a news article.
- The teacher asks the student to reread and answer:

  WHO?
  WHAT?
  WHERE?
  WHEN?

Suggested Criterion Referenced Measurement

Given a selection, the student will identify those words or phrases which answer these key questions: **WHO?** **WHAT?** **WHEN?** **WHERE?**

SUGGESTED APPLICATION WITH LEARNERS

3 RECALLING FROM MEMORY INFORMATION EXPLICITLY STATED IN THE SELECTION

Competence with the location of information precedes the development of recall skills.

Since recall is a memory task, the learner will remember best those things to which he is directed. The learner gains confidence through answering the key questions. Following his response he should be encouraged to return to the material to confirm his answer.

Content Example—Science

With traditional sources of energy rapidly dwindling, scientists have begun to explore two promising options.

At the southern end of the Rocky Mountains, about 20 miles west of Los Alamos, New Mexico, engineers are drilling deep into rocks at the edge of an extinct volcano. Although they are using Geiger counters and oil-drilling equipment, they are not seeking metals or petroleum. Instead, they are looking for sources of heat that they can mine to boil water that will drive steam turbines.

In northern Arizona, optical physicists are testing strange mirror devices that focus the rays of the sun, again, as a heat source to drive turbines. Both groups are after the same thing—to develop new sources of electric power that will help solve the growing energy crisis that is gradually affecting almost every part of the world.

Excerpt, "The Power Above, The Power Below," John F. Henahan, *Science Year, The World Book Science Annual* (Field Enterprises Educational Corporation, 1973)

Suggested Teaching Tactic

- Using the purpose-setting formula, direct the student to read the selection. Following completion of the assigned reading, instruct the learner to provide **from memory** all possible details in each of the appropriate categories.

- Put the following questions on the board before the student reads the article:
  1. **Who** is drilling?
  2. **What** are they seeking?
  3. Does the article tell **when** the source of energy will be exhausted?
  4. **Where** is this extinct volcano?

- Prior to reading, give the student the key words used in the selection. (Those **words** which answer the key questions: WHO? WHAT? WHEN? WHERE?) After reading, ask him to recall additional information related to the key words. Again, provide opportunities for self confirmation of responses.

- physicists
  scientists
  engineers
  drilling
  testing
  southern Rocky Mountains
  northern Arizona
  turbines

- Give the student factual questions which are to be answered from memory following the reading assignment.

- Who is testing mirror devices? Where are they working? What are the engineers using?

Suggested Criterion Referenced Measurement	Given a short informative selection, the learner recalls the answers to factual questions.

SUGGESTED APPLICATION WITH LEARNERS

4 IDENTIFYING A QUESTION ON THE LITERAL LEVEL

Content Example—Mathematics

Latitude and Longitude

Points on the earth's surface are located by ordered pairs of numbers. Since the earth is a sphere, a straight line cannot be drawn on its surface. A circle and a half circle are chosen as the axes. Do you know what these axes on the earth are called? The **equator** is the circle axis and is midway between the two poles; the half-circle axis, called the **prime meridian**, extends from the North Pole through the city of Greenwich, England, to the South Pole. **Latitude** is measured in degrees north and south from the equator, and **longitude** is measured in degrees east and west from the prime meridian. The maximum number of degrees of latitude is 90 and the maximum number of the degrees of longitude is 180. Any point on the earth can be located by specifying its latitude, north or south, and its longitude, east or west (two numbers and two directions).

World Tipped to Northern Hemisphere

Figure 6-7

The figure shown is a picture of a globe with solid lines marking off the total surface in two directions, the prime meridian running from north to south and the equator girdling the globe east and west. The ship shown sailing the ocean would be at 30° west longitude, because it is 30° west of the prime meridian, and at 45° north latitude, because it is 45° north of the equator. If the captain of the ship radioed his position as latitude 45° north and longitude 30° west, could that position be other than the one shown in the illustration? Would the captain use an ordered pair? Can you locate the equator by giving its longitude and latitude? Explain. Locate point x (just off the tip of Florida) by giving its approximate latitude and longitude.

Notice that if we did not use the degree symbol and if we used plus and minus signs instead of the words "east," "west," "north," and "south," these coordinates would be much the same as the first ones we discussed. The essential difference is that we thought of our coordinates for city blocks as being on a flat surface; our present coordinates are on a sphere, which is curved.

Excerpt: *Mathematics. An Integrated Series*, Book One, Price, Peak, and Jones (Harcourt, Brace and World, Inc., 1965)

Suggested Teaching Tactic

Literal questions can be answered by specific words or sentences. The teacher sets the purpose prior to silent reading, directing attention to facts and details. The student will locate and recall best those points previously identified through purpose setting cues.

The teacher gives the purpose-setting formula before silent reading:

WHO? WHAT? WHEN? WHERE?

Set reading purpose by directing the silent reading through the presentation of key questions:

On page 175, what names are given to the circle and half circle chosen as the earth's axes?

What is measured in degrees north and south from the equator?

What is measured in degrees east and west from the prime meridian?

Find the sentence on page 176 which tells how any point on the earth may be located. Copy it on your paper.

Suggested Criterion Referenced Measurement

Given a short passage in which new terms are introduced along with their definitions, the learner will supply the appropriate responses. The use of the key questions will determine whether the learner will recall or locate the term or its definition.

SUGGESTED APPLICATION WITH LEARNERS

5 ORGANIZING INFORMATION INTO GIVEN CATEGORIES

Content Example—Social Studies

Ohio	Vice President Tyler
War of 1812	Mexican War
Toledo region	Free Soilers
President Jackson	William Holmes McGuffey
Whig Party	1835
William Henry Harrison	after one month
Log Cabin Campaign	State House

Excerpt. *Ohio: Geography—History—Government*, Carl H. Roberts (Laidlaw Brothers, 1969).

Suggested Teaching Tactic

Give the words from the content which answer key questions and represent the author's main point:

Ask students to place the key words in the proper categories.

WHO?	WHAT?	WHEN?	WHERE?
1.	1.	1.	1.
2.	2.	2.	2.
3.	3.	3.	3.
4.	4.	4.	4.
5.	5.	5.	5.

Content Example—Literature

On the Grasshopper and the Cricket

JOHN KEATS

The poetry of earth is never dead:
When all the birds are faint with the hot sun,
And hide in cooling trees, a voice will run
From hedge to hedge about the new-mown mead;
That is the Grasshopper's—he takes the lead
In summer luxury—he has never done
With his delights; for when tired out with fun
He rests at ease beneath some pleasant weed.
The poetry of earth is ceasing never:
On a lone winter evening, when the frost
Has wrought a silence from the stove there shrills
The Cricket's song, in warmth increasing ever,
And seems to one in drowsiness half lost,
The Grasshopper's among some grassy hills.

Excerpt: *Counterpoint in Literature*, Pooley, Daniel, Farrell, Grommon, and Niles (Scott Foresman and Co., 1967), 373.

Suggested Teaching Tactic

With the student decide on categorical headings. Have the student give words which relate to the classifications. (The chalkboard is used for this introductory class participation activity.)

Following silent reading, discussion and enjoyment of the poem, have the student locate all the nouns in the poem and place them in categories of:

People **Places** **Things**

or

Identify the nouns, verbs, and adjectives in the poem. Place them in their respective categories.

Nouns **Verbs** **Adjectives**

Suggested Criterion Referenced Measurement

Given a passage of indeterminate length, the student will organize those words from the passage under the appropriate category headings. The words may be either provided or located by the student, according to teacher direction.

SUGGESTED APPLICATION WITH LEARNERS

PURPOSE SETTING BY THE STUDENT PRIOR TO READING AS AN AID TO LOCATING AND RECALLING INFORMATION EXPLICITLY STATED IN THE SELECTION

Mastery of location and recall skills does not necessarily mean that the student is able to establish his own purposes before reading. The teacher provides guidance prior to silent reading by directing the student's attention to the WHO? WHAT? WHEN? and WHERE? in the content. This direction diminishes only when the student makes appropriate responses to the key questions independently.
The following activity may help students to realize the importance of key questions.

Content Example

A telegram is a good example of information conveyed through key points only:

ART DIRECTORS BOARD MEETING STOP SATURDAY NOON STOP MUSEUM DINING ROOM STOP

Suggested Teaching Tactic

Ask the learner to set purposes for himself. He formulates his own questions prior to and while reading. Listing of these questions will help the student predict the factual input. After reading, he sees how many questions he is able to answer, how many facts were not stated, and how many facts he had not predicted.

Build literal questions using the key points provided in the telegram.

1. WHO? _____

2. WHAT? _____

3. WHEN? _____

4. WHERE? _____

Further development of this process involves building the information given into a paragraph which includes the key points.

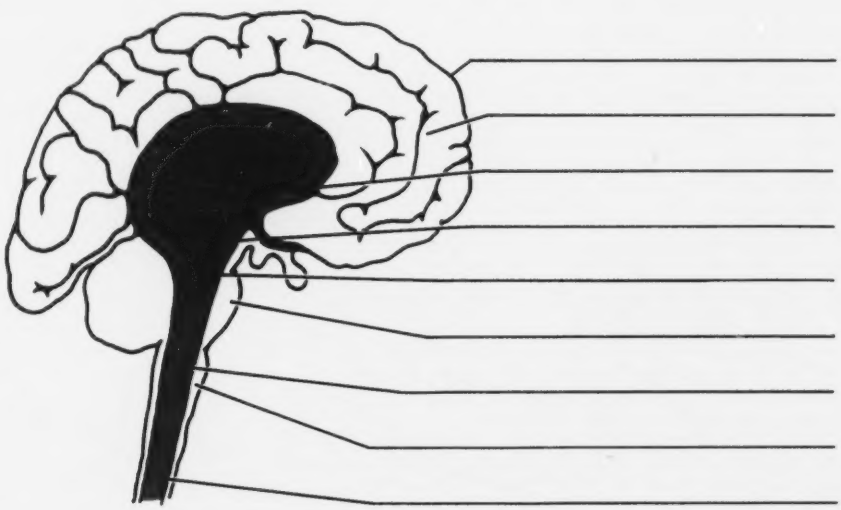
Suggested Criterion Referenced Measurement

Given a selection, the student will survey and ***construct*** questions reflecting his ***prediction*** of the main points to be identified. Having read the material, the learner will then ***answer*** the questions.

SUGGESTED APPLICATION WITH LEARNERS

7 MATCHING AND LABELING

Content Example—Science



CENTRAL NERVOUS SYSTEM	FUNCTIONS
1. CEREBRUM	Outer cover of the brain
2. RECTICULAR FORMATION	Regulates memory, speech, thought, touch, pressure, position and movement
3. PONS	Relays impulses from one part of brain to another
4. CEREBRAL CORTEX	Controls emotions, appetite, and secretions of hormones from glands
5. SPINAL CORD	Closely associated with hypothalamus; activates the rest of the brain, and regulates awareness
6. THALAMUS	Connecting tissue between the cerebrum and the cerebellum
7. HYPOTHALAMUS	Upward extension of the spinal cord
8. BRAIN STEM	Regulates swallowing, breathing, heartbeat, blood flow, cough center
9. MEDULLA OBLONGATA	Associated with reflex action; conducts messages to and from brain

Excerpts: *Drugs, Alcohol, Tobacco and Human Behavior*, Ohio Department of Education (Educational Research Council of America, 1973), 32.

Suggested Teaching Tactic

Following the teaching of the vocabulary both for decoding and meaning and directed silent reading, direct students to match the **Central Nervous System Area** with its related function. (Match the area number with the appropriate function.)

Ask the student to label the drawing by using the names of **The Central Nervous System Area.**

Suggested Criterion Referenced Measurement

Given a list of terms and a list of their definitions, the student will match each term with its definition.

Given a diagram and a list of terms, the student will label the area indicated with the appropriate term.

(These measurements may be done in conjunction with each other or separately.)

8 UTILIZING MULTIPLE CHOICE

Content Example—Science

Green plants make their own food. Food is made in the leaves of green plants. This food is glucose (gluekose), a kind of sugar. You can think of a leaf as a small factory. Like a factory, the leaf needs certain raw materials to make food. These materials are water and carbon dioxide. For the food-making process, chlorophyll and sunlight are required. The plant brings *water* to the leaves through the roots and stem. The plant takes *carbon dioxide* from the air through tiny holes in the underside of its leaves. These are the same holes that give off oxygen into the air. *Chlorophyll* is present in the green leaf. *Sunlight* supplies the energy needed by the plant to make food. These are the four things the plant must have to make glucose.

Scientists do not know exactly how the plant makes its own food from the raw materials. Somehow, with the help of chlorophyll and sunlight, a green plant changes water and carbon dioxide into glucose and oxygen. The plant gives off the oxygen as a waste product. The whole process is called *photosynthesis* (foh-toh-sin-theh-siss). (See Fig. 7-11.) This word means "putting together by light." You can show that light is a necessary part of this process.

Excerpt: *Science—Experiment and Discovery*, Davis, Burnett, Gross, and Prichard (Holt, Rinehart and Winston, 1969), 218-219.

Suggested Teaching Tactic

Selection among multiples requires not only the location of key words but the understanding of meaning. Multiple choice is a learning activity which follows directed reading and thorough discussion of the content.

Direct the student to select one or more choices to complete the sentences.

1. To make glucose a plant must have
   a. water, carbon dioxide, sand and sunlight
   b. water, chlorophyll, soil and sunlight
   c. water, carbon dioxide, chlorophyll and sunlight
   d. water, carbon monoxide, chlorophyll and sunlight
   e. water, sunlight, heat and soil

2. The food of green plants is made
   a. in the leaves
   b. in the root
   c. under the bark
   d. only in the buds

3. Photosynthesis is

a. a waste product of the plant
b. the process by which the plant changes water and carbon dioxide into glucose and oxygen
c. the process by which new leaves are manufactured
d. the process by which leaves collect the sun's rays

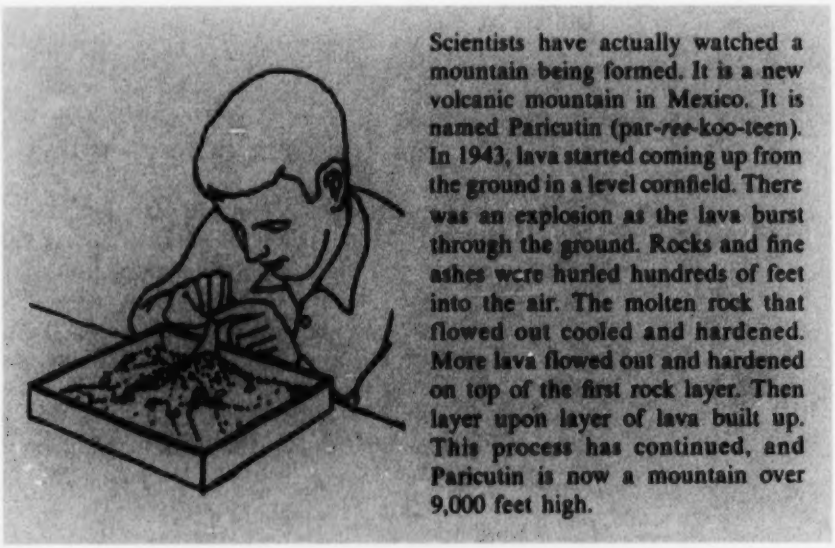
Suggested Criterion Referenced Measurement

Given a series of multiple choice items, the learner will make those selections which will complete the measurement activity.

SUGGESTED APPLICATION WITH LEARNERS

9 LOCATING CAUSE AND EFFECT

Content Example—Science



Scientists have actually watched a mountain being formed. It is a new volcanic mountain in Mexico. It is named Paricutin (par-*ree*-koo-teen). In 1943, lava started coming up from the ground in a level cornfield. There was an explosion as the lava burst through the ground. Rocks and fine ashes were hurled hundreds of feet into the air. The molten rock that flowed out cooled and hardened. More lava flowed out and hardened on top of the first rock layer. Then layer upon layer of lava built up. This process has continued, and Paricutin is now a mountain over 9,000 feet high.

Excerpt: *Science 2 Experiment and Discovery*, Davis, Burnett, Gross, and Prichard (Holt, Rinehart and Winston, 1969), 181.

Suggested Teaching Tactic

Following preparatory class discussion of cause and effect with many examples, introduce the vocabulary of key content words which trigger meaning and set the purposes for silent reading.

After class discussion of the content, ask the student to match the causes with the effects:

CAUSES	EFFECTS
explosion	new mountain
layers of lava	rocks hurled
Paricutin formed	scientists watching

Suggested Criterion Referenced Measurement

Given stated causes and effects from a passage, the student will match each effect with its cause.

SUGGESTED APPLICATION WITH LEARNERS

10 RECALLING CAUSE AND EFFECT RELATIONSHIPS

Content Example—History

GROWTH OF OHIO'S SCHOOLS

A longer time in school. A hundred years ago, Ohio had no law saying that children had to go to school. Free public schools were already in existence, as you read in Chapter 11. But a century ago it was left up to parents whether they would send their children to school, keep them at home doing farm chores, or send them into factories to work. And many families were so poor that they had great need of the scanty wages the children could earn in the factories. It was not until 1877 that the first school attendance law was passed. It said that children between eight and fourteen had to go to school for twelve weeks out of the year. But there were no truant officers then, nor was anyone punished for not obeying the law. So the law didn't do very much good.

For many years some factory owners fought compulsory education laws, because they counted on the cheap labor of school-age children. Nevertheless, in 1889 the legislature of Ohio passed a strict law on school attendance, providing for truant officers to see that the law was really carried out. Finally the Bing law of 1921 was passed, which provided that all children between six and eighteen had to be in school.

Not only must Ohio children go to school, but, as you know, the State must provide free tuition and free textbooks for all pupils in public schools.

But parents, if they wish to, are free to send children to private or parochial schools at their own expense. About one fifth of Ohio's children attend private or parochial schools.

Excerpt: *Ohio Geography—History—Government*, Carl H. Roberts (Laidlaw Brothers, 1969)

Suggested Teaching Tactic

After vocabulary introduction and purposeful silent reading, ask for memory responses from the content. Teacher questions are directed toward securing recall of reasons stated in the narrative. Guidance is given by drawing attention to cause and effect clue words which may include **because, due to, therefore, on account of, since,** and the like.

Questions typical of cause and effect recall are

1. Why didn't the school attendance law of 1877 do very much good?
2. Why did some factory owners fight compulsory education laws?

Suggested Criterion Referenced Measurement

Given a passage containing stated cause and effect relationships, the student will identify either the cause or effect as requested.

SUGGESTED APPLICATION WITH LEARNERS

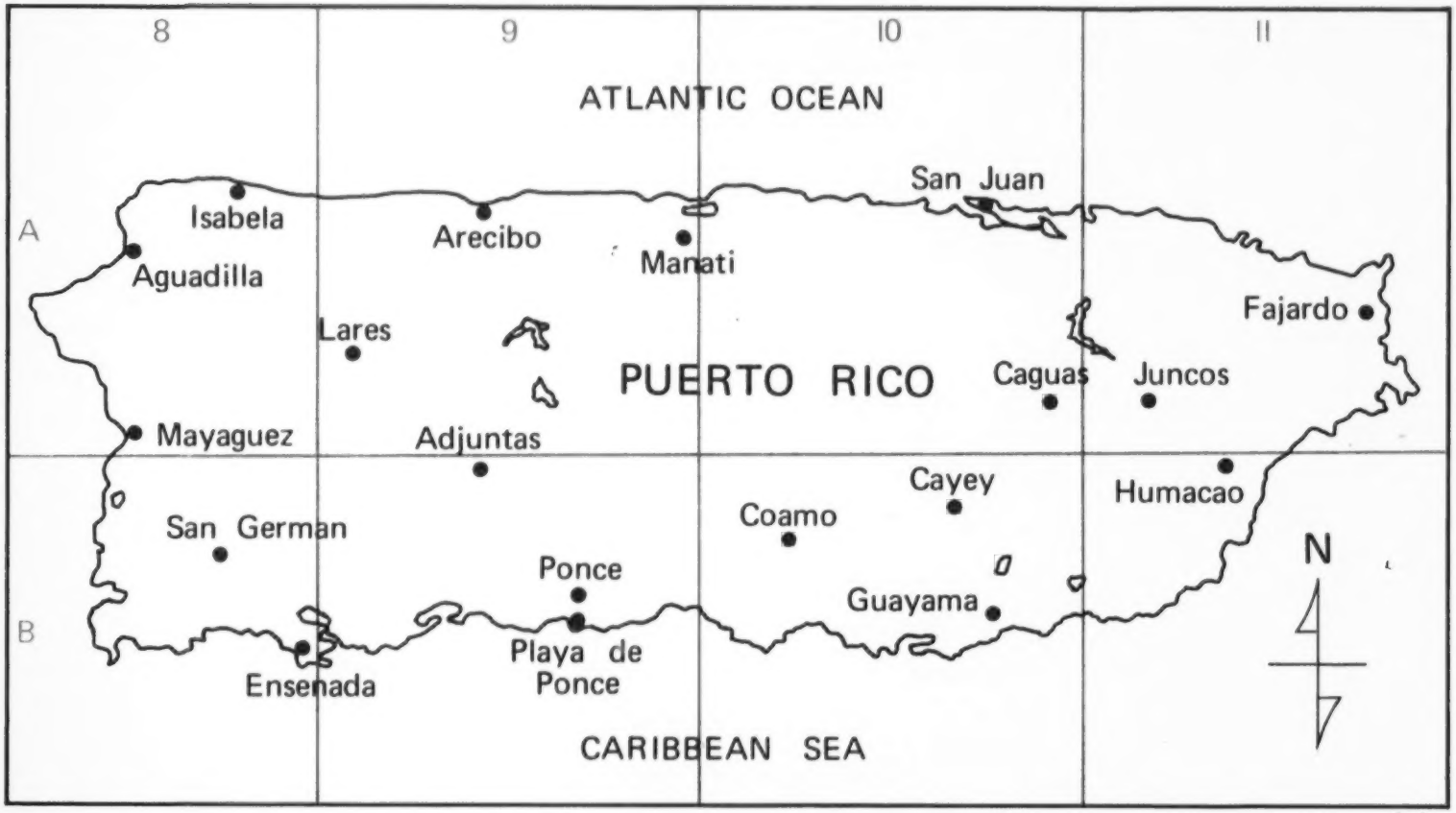
II FOLLOWING DIRECTIONS

Content Example—Mathematics

READING AND USING MAPS

On the map of Puerto Rico you will notice the numerals 8, 9, 10, and 11 across the top and the letters A and B along the side. Each of the indicated squares can be thought of as a "point." Each ordered pair, such as 9,A, gives the location of one square; that square contains many cities and towns. We say that the coordinates of Arecibo are 9,A. There are a number of other cities in the square. Locate Arecibo on the map.

Excerpt: *Mathematics—An Integrated Series*, Book One, Price, Peak, and Jones (Harcourt, Brace and World, 1965)


8
9
10
11
ATLANTIC OCEAN
San Juan
Isabela
Arecibo
Manati
A
Aguadilla
Fajardo
Lares
PUERTO RICO
Caguas
Juncos
Mayaguez
Adjuntas
Cayey
Humacao
Coamo
San German
N
Ponce
Guayama
B
Playa de
Ponce
Ensenada
CARIBBEAN SEA

Suggested Teaching Tactic

Thoughtful teaching for using content to follow directions calls attention to relationships and to understanding the correspondence of their meaning.

Opportunities to learn this skill include demonstrating the use of an object, performing an experiment, drawing charts, classifying like and unlike substances, developing techniques for interviewing, making maps, and keeping records.

Teaching how to follow directions begins with one-step directions, and proceeds to those which will involve two steps. Then three or more steps may be introduced and finally directions for which the number of steps is not stated explicitly.

Teacher preparation includes selecting and formulating directions from the subject matter.

Extend the example of reading and using maps by giving directions similar to the following:

1. Locate the coordinates of each of these cities:

   Ponce
   Caguas
   Ensenada
   Humacao
   Aguadilla
   Playa de Ponce

2. Circle the city closest to:

   Fajardo

3. Make an X on the city that is between:

   Manati
   Isabela

4. Draw a line from Isabela to the city that is the farthest from Isabela within the square A-8. Then continue that line to each of the cities in the B squares that is the closest to the A squares.

Suggested Criterion Referenced Measurement

Given a series of directions, the learner will follow them, his accuracy to be judged from the end product of his efforts.

12 DEVELOPING LITERAL SKILLS THROUGH THE USE OF PUZZLES

Content Example—Music

THE HUMAN VOICE

The human voice was the first musical instrument, and its tone color provided the model for many instruments that have been developed. The greatest compliment that can be paid an instrumental performer is that he makes his instrument "sing."

The wide range of pitches and the rich variety in tone color of which human voices are capable make them uniquely effective in expressing human feeling. The beauty of the solo voice and the richness of combined voices have kindled the imagination of countless composers throughout the history of music. Some of the most sublime music in the repertory has been written for vocal solo or vocal ensemble.

The total range of singing voices extends almost six octaves from the dark richness of the bass to the light flute-like tone of the soprano. There are six basic types of voices; three female: *soprano, mezzo-soprano,* and *contralto;* and three male: *tenor, baritone,* and *bass.* Each type of voice may serve in a solo role. Four voices—soprano, alto, tenor, and bass—combine to form the mixed chorus (SATB).

Excerpt: *Discovering Music Together*, Leonard, Krone, Wolfe, Fullerton (Follett Educational Corporation, 1970), 112

Suggested Teaching Tactic

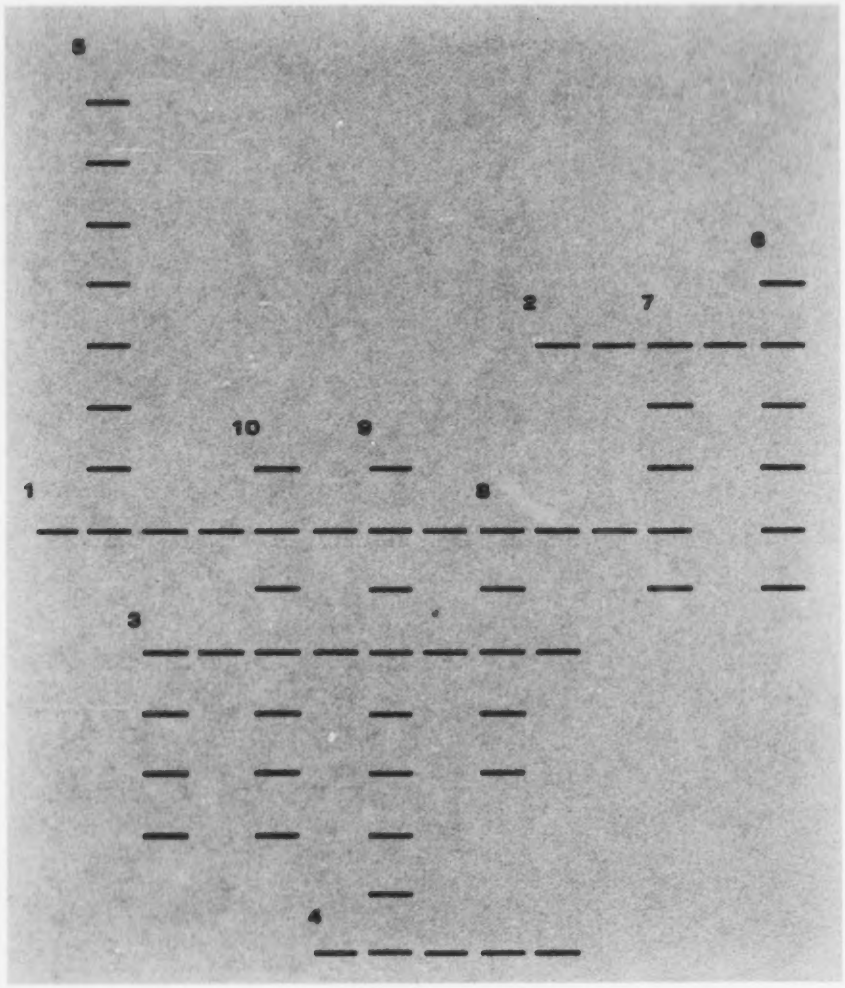
Puzzles relate directly to the meaning of literal comprehension for they call for locating specific answers to factual questions by finding contextual facts and detail. Construct various word games which may apply to the content of any subject area.

The student both enjoys and learns from building word games, as well.

An example for the teacher given below follows literal skills.

Direct the student to use the selection content to complete the puzzle by

1. filling in the blank, quoting directly from the text.
2. locating the correct term, having been given the description.

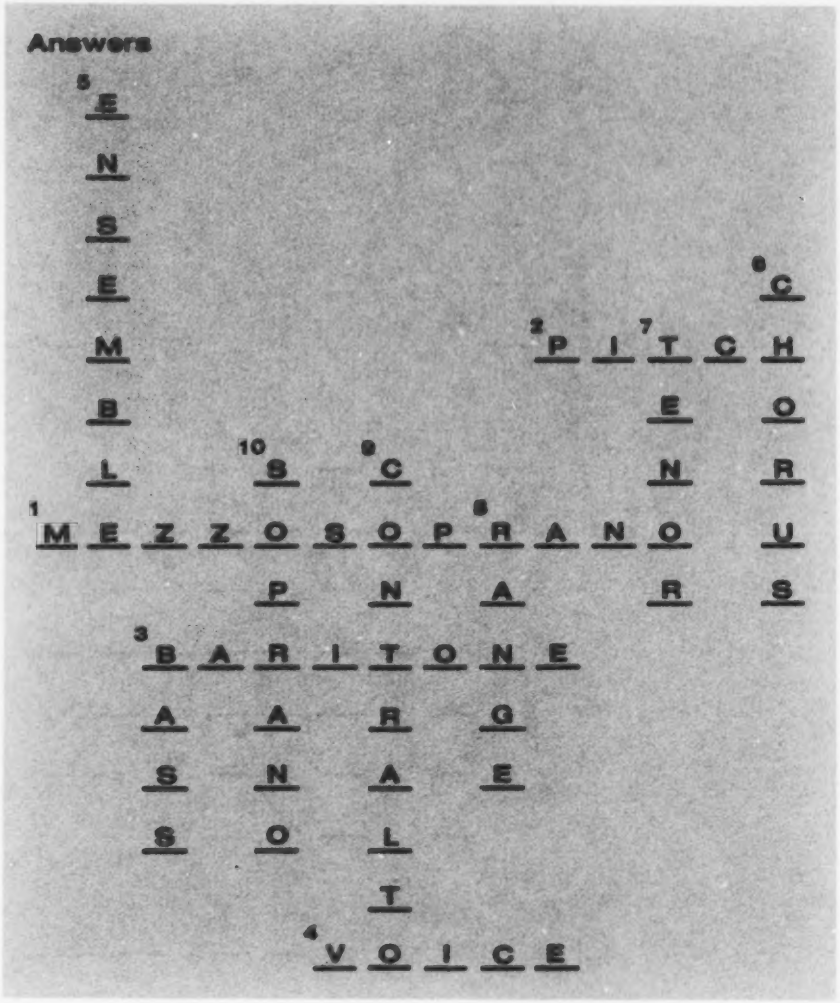


Across:

1. Female voice type—middle range
2. Human voices are capable of making a wide variety of _____ and tone color
3. Male voice type—middle range
4. "The human _____ was the first musical instrument."

Down:

3. Male voice type—low range
5. "written for vocal solo or vocal _____"
6. "mixed _____ (SATB)"
7. Male voice type—high range
8. The singing voices _____ extends almost six octaves.
9. Female voice type—low range
10. Female voice type—high range



Suggested Criterion Referenced Measurement

Given a teacher-made puzzle for a content selection, the student will locate specific facts to complete the puzzle.

Given a selection, the student will construct a puzzle using the key facts presented in the content material.

SELF-CORRECTIVE POST TEST

1. Can you name four key questions which trigger literal comprehension?

   Yes Partially No

2. Do you know how to identify questions on the literal level?

   Yes Partially No

3. Are you able to construct meaningful questions on the literal level of comprehension?

   Yes Partially No

4. Can you name six forms of literal comprehension?

   Yes Partially No

5. Can you construct exercises using these different forms?

   Yes Partially No

6. How many of these forms have you utilized in the teaching of your last content unit?

   Yes Partially No

Increased competence with the meaningful use of literal comprehension can best be demonstrated through immediate application to your content area. Therefore, as you think in terms of your long range plans, select a unit of content yet to be taught. Utilize this opportunity for self-study and construct literal comprehension activities. Remember that these will be especially useful with those students whose current achievement is adequate only for this level. However, for all students, literal comprehension is the foundation for learning at higher levels.

This *Self-Corrective Post Test* form is designed for the convenience of teacher readers to reproduce multiple copies for use as needed.

GLOSSARY

Cause and effect clue words	those terms which call attention to related happenings within the content of the material: **because, due to, therefore, on account of, since**
Cause and effect	happenings or actions related in that one produces the other
Contextual facts	circumstances which surround a word or passage and throw light upon its meaning
Criterion referenced measurement	evaluation based upon a standard of performance relative to a particular competence
Decoding	the translation of printed word back into speech since printed material can be thought of as speech written down
Directed silent reading	step two in the instructional cycle of reading. It is preceded by presenting background experiences and vocabulary development. Students read silently only after receiving direction through the purpose setting formula: **WHO? WHAT? WHEN? WHERE?**
Factual questions	to ask students for that information which is stated in the material
Literal comprehension	the primary level of getting meaning from the printed page. It focuses upon locating and/or recalling facts and details in the content
Multiple choice	requires the understanding of key words as they are found in a particular context
Purpose setting formula	**WHO? WHAT? WHEN? WHERE?** a means of directing the learner's attention to the specific cues necessary for discerning the facts and details. This teaching tactic precedes directed silent reading
Recall	the teacher asks for memory responses on the content which are usually quickly learned and quickly forgotten

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COMPETENCY CRITERIA

The following characteristics of effective content-related reading instruction may serve as self-appraisal guidelines.

Students are enabled to gain information, knowledge, wisdom and enjoyment from reading, for my teaching procedures include:

_____ Planning and tailoring my teaching to accommodate the wide range of reading strengths and weaknesses represented within the class.

_____ Fusing reading with other components of language (listening, speaking, and writing) to reinforce meaning.

_____ Relating the content to the varied experiential background of the students.

_____ Encouraging students to react to the meaning of print content by thinking critically about it.

_____ Utilizing many types of reading sources comprising multi-readability levels.

_____ Teaching vocabulary and comprehension skills on various levels to assure that all students experience success.

_____ Guiding silent reading through pre-reading preparation, vocabulary assistance, and skillful questioning.

_____ Providing for varied uses of reading in problem solving, gaining information, and enjoyment.

_____ Modeling positive attitudes for students by being a high interest reader myself.

_____ Being committed to improve reading abilities and book interest within the class and school.

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